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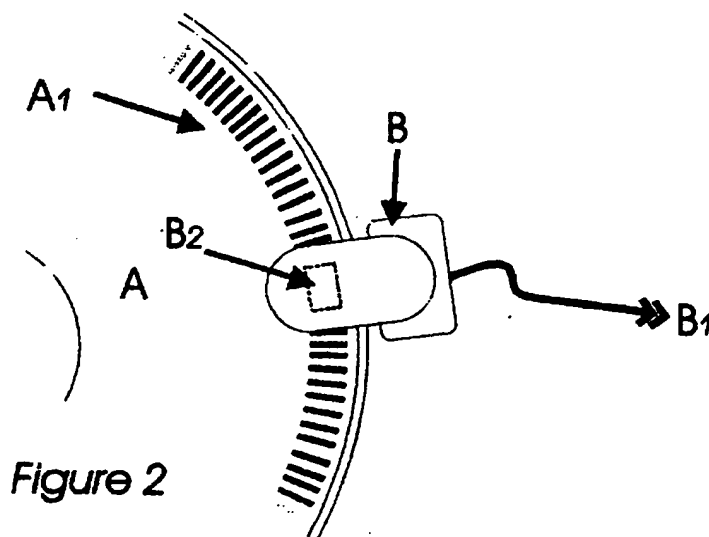
(52) UK CL (Edition S )  
**G5R RAC RB265**  
**G5J JEMX**

(56) Documents Cited  
**EP 0903169 A2 WO 97/33282 A1 WO 97/01168 A1**  
**WO 00/21090 A1 JP 060089501 A US 5512704 A**  
**US 5350882 A**

(58) Field of Search  
**UK CL (Edition S ) G5J JEMX JESD JESL , G5R RAC**  
**RFE**  
**INT CL<sup>7</sup> G10H 1/00 1/02 7/04 , G11B 19/20 19/28**  
**31/00**  
**Online: WPI; EPODOC; JAP10**

(54) Abstract Title  
**Record deck interface for DJ scratching**

(57) A device [B] to sense the movement of a record [A] on a record deck, in order to control audio playback on a secondary system (e.g. a Computer) as if the audio was recorded on the record itself. The movement sensor [B] uses a reflective optical encoder [positioned at B2] to detect the pattern [A1] around the perimeter of the record [A]. This speed and direction information can be used to control audio playback and edit parameters. The system allows DJ's and other musicians to use techniques they have developed without the need to learn a new interface.



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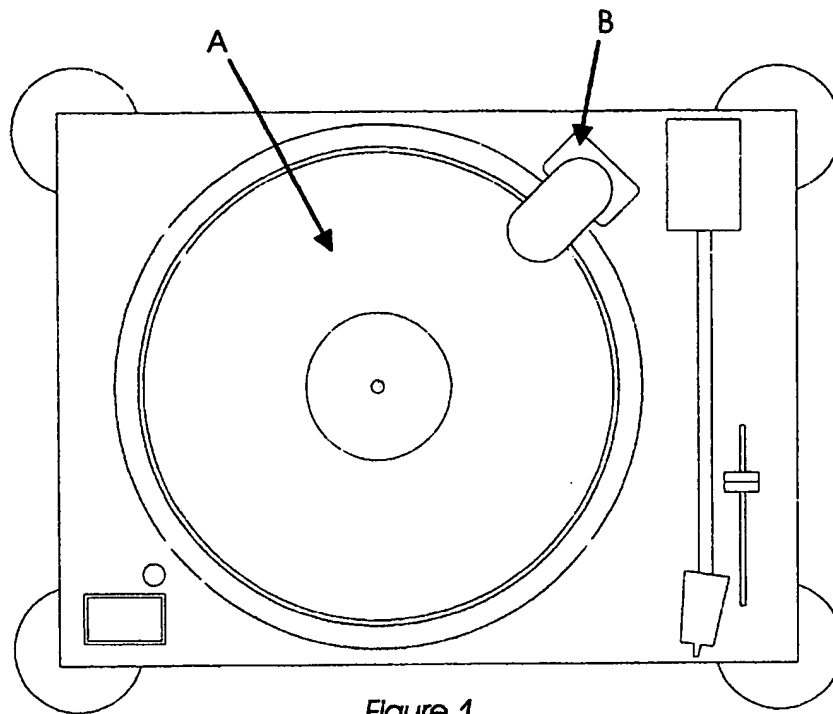


Figure 1

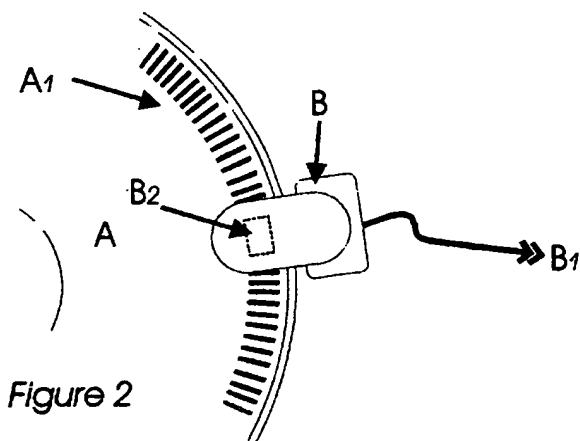


Figure 2

**RECORD DECK INTERFACE**

This invention relates to using a record deck as a method of manipulating music or sound of a different format.

There is no method of manipulating songs and sound samples that are not pressed on a vinyl record (e.g. CDs, WAV computer files) in the same way as can be done using a record deck and slip mat. Currently the sounds must be cut to a record before they can be used which takes a long time (days) and is expensive. It is also not a feasible option for most musicians.

One aim of this invention is to provide an interface between a record deck and a chosen processor (e.g. a computer) to allow any form of sound to be manipulated as if the sound had been pressed to a record.

The invention gathers and transmits information about the speed and direction of a dummy record on the record deck (not of the record deck itself) which can be processed by a secondary system to control audio playback and edit parameters.

The invention can be used with most existing record decks and requires no modifications to the workings of the record deck itself.

The invention consists of two parts:-

- The encoded dummy record [A]
- The record movement sensor [B].

[A] is a specially encoded 12" record which has a pattern of reflective and non-reflective areas [A1] around it's perimeter (e.g. black and white). Otherwise, it is very similar to a standard 12" vinyl record.

[B] is a sensor which using a reflective optical encoder [positioned at B2] can detect the movement of the reflective pattern [A1]. Information on the record's speed and direction of movement can be found, which is sent as an electronic signal [B1] to a secondary device to be processed in any desired way.

*Figure 1* shows the positioning of the movement sensor [B] on a standard record deck.

*Figure 2* shows the record [A], and the reflective pattern around it's perimeter [A1], with the movement sensor [B] positioned over the pattern.

The movement sensor [B] is made such that it can be adjusted to suit any record deck, and positioned so it does not hinder the user in any way.

An example of the invention's use is to control audio playback on a computer. Using appropriately written software, the sound or song can be played as if it was on the record player. The user may use any DJ techniques they have developed, without needing to learn a new interface system.

**CLAIMS**

1. A device which detects movement of a record on a record deck.
2. A device as claimed in Claim 1, that uses detected movement information to control audio playback or edit parameters.
3. A device substantially as herein described and illustrated in the accompanying drawings.



Application No: GB 0004118.6  
Claims searched: All

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Examiner: Donal Grace  
Date of search: 8 August 2001

## Patents Act 1977 Search Report under Section 17

### Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.S): G5J (JEMX, JESD, JESL) G5R (RAC, RFE)

Int Cl (Ed.7): G10H 1/00, 1/02, 7/04 G11B 19/20, 19/28, 31/00

Other: Online: WPI; EPODOC; JAPIO

### Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	EP 0903169 A2 (KONAMI) see column 12 lines 1 to 18	1 and 2
X, E	WO 00/21090 A1 (BORIEUX) see page 17 lines 31 to 37	1 and 2
X	WO 97/33282 A1 (PRETZ et al) see abstract	1 and 2
X	WO 97/01168 A1 (RICKLI) see abstract	1 and 2
X	JP 060089501 A (CASIO) see PAJ abstract and figure 1	1 and 2
X	US 5512704 (ADACHI) see column 3 lines 52 to 55	1 and 2
X	US 5350882 (KOGUCHI et al) see abstract	1 and 2

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

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